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ENCLOSURE 3

Proposed
Toxic Air Contaminant Identification List
September 1997

I. Substances, known to be emitted in California, identified as Toxic Air Contaminants, with health values reviewed by the Scientific Review Panel.

Acetaldehyde
Arsenic and compounds
(inorganic including arsine)
Asbestos
Benzene
(including benzene from gasoline)
Benzo[a]pyrene[1]
Potency Equivalency Factors for PAHs
benzo[a]anthracene
benzo[b]fluoranthene
benzo[j]fluoranthene
benzo[k]fluoranthene
chrysene
dibenz[a,j]acridine
dibenz[a,h]acridine
7H-dibenzo[c,g]carbazole
dibenzo[a,e]pyrene
dibenzo[a,h]pyrene
dibenzo[a,i]pyrene
dibenzo[a,l]pyrene
1,6-dinitropyrene
1,8-dinitropyrene
indeno[1,2,3-cd]pyrene
5-methylchrysene
6-nitrocrysene
2-nitrofluorene
1-nitropyrene
4-nitropyrene
dibenz[a,h]anthracene
3-methylcholanthrene
5-nitroacenaphthene
7,12-dimethylbenzanthracene
1,3-Butadiene
Cadmium and compounds
(metallic cadmium and
cadmium compounds)
Carbon tetrachloride
(tetrachloromethane)
Chloroform
Chromium (VI)
Chlorinated dibenzo-p-dioxins
and Dibenzofurans
(chlorinated in the 2,3,7 and 8
positions and containing 4,5,6,
or 7 chlorine atoms)
Ethylene dibromide
(1,2-dibromoethane)
Ethylene dichloride
(1,2-dichloroethane)
Ethylene oxide
(1,2-epoxyethane)
Formaldehyde
Inorganic Lead
(includes elemental lead)
Methylene chloride
(dichloromethane)
Nickel and compounds
Tetrachloroethylene
(perchloroethylene)
Trichloroethylene
Vinyl chloride
(chloroethylene)

II. Substances, known to be emitted in California, identified as Toxic Air Contaminants, which have health values developed by U.S. Environmental Protection Agency, or California Environmental Protection Agency, or have health values under review or nominated for development.

a. Substances which have health values or have health values in the review process for development under SB 1731 Risk Assessment Guidelines. This may not include a full set of health values (ie. acute non-cancer, chronic non-cancer, cancer potency).

Acetamide
Acrolein
Acrylamide
Acrylic acid
Acrylonitrile
Allyl chloride
Aniline
[‡]o-Anisidine
[*]Antimony and compounds

Benzyl chloride
Beryllium and compounds
Bis(2-ethylhexyl)phthalate (DEHP)
Carbon disulfide
Chlorine
Chlorobenzene
‡Chloroprene
Chromium and compounds
Cobalt and compounds
Cresols/Cresylic Acid (isomers and mixture)
‡Cyanide and compounds[4]
1,4-Dichlorobenzene (p)
3,3-Dichlorobenzidene
1,3-Dichloropropene
Diethanolamine
*Dimethyl formamide
*‡1,1-Dimethyl hydrazine
Dimethyl phthalate
‡Dimethyl sulfate
1,4-Dioxane (1,4-Diethyleneoxide)
Epichlorohydrin (1-Chloro-2,3-epoxypropane)
*‡Ethyl acrylate
Ethyl benzene
Ethyl carbamate (Urethane)
Ethyl chloride (Chloroethane)
Ethylene glycol
Ethylene thiourea
Ethylidene dichloride (1,1-Dichloroethane)
*‡Fine mineral fibers
Glycol ethers[2]
Hexachlorobenzene
Hexachloroethane
Hexamethylene-1,6-diisocyanate
Hexane
Hydrazine
Hydrochloric acid
*Hydrogen fluoride (Hydrofluoric acid)
Isophorone
Lead compounds (organic lead and compounds)
Maleic anhydride
Manganese and compounds
Mercury and compounds
Methanol
Methyl bromide (Bromomethane)
Methyl chloroform (1,1,1-Trichloroethane)
Methyl ethyl ketone (2-Butanone)
Methyl methacrylate
*Methyl tert butyl ether
4,4-Methylene bis(2-chloroaniline)
‡Methylene diphenyl diisocyanate
4,4-Methylenedianiline
N-Nitrosodimethylamine
N-Nitrosomorpholine
Napthalene
Nitrobenzene
*2-Nitropropane
Pentachlorophenol
Polychlorinated biphenyls (Aroclors)
Phenol
Phosgene
Phosphine
Phosphorus
Phthalic anhydride
Polycyclic Organic Matter[5]
1,3-Propane sultone
‡Propylene dichloride (1,2-Dichloropropane)
Propylene oxide
Selenium and compounds
*Styrene
Toluene
Toluene-2,4-diisocyanate
1,1,2-Trichlorethane
2,4,6-Trichlorophenol
Vinyl acetate
Vinylidene chloride (1,1-Dichloroethylene)
Xylenes (isomers and mixture)
o-Xylenes
m-Xylenes
p-Xylenes

b. Substances nominated for review for development of health values.

Antimony and compounds
Dimethyl formamide
1,1-Dimethyl hydrazine
Ethyl acrylate
Fine mineral fibers[3]
Hydrogen fluoride
Methyl chloride (Chloromethane)
Methyl tert butyl ether
2-Nitropropane
Styrene

III. Substances known to be emitted in California, identified as Toxic Air Contaminants, without health

values.

Acetonitrile
Acetophenone
Carbonyl sulfide
Catechol
Chloroacetic acid
Chlorobenzilate
Cumene
Dibenzofurans
Dibutylphthalate
1,2-Epoxybutane
Hydroquinone
Methyl isobutyl ketone (Hexone)
Pentachloronitrobenzene (Quintobenzene)
Polycyclic Organic Matter[5] including but not limited to:
Anthracene
Propionaldehyde
(2-Methyl aziridine)
1,2-Propylenimine
(2-Methyl aziridine)
Radionuclides[6]
Titanium tetrachloride
1,2,4-Trichlorobenzene

IV. Substances currently under review or nominated for review for identification as Toxic Air Contaminants.

a. Substances in review process for identification.

Diesel Exhaust

b. Substances nominated for review.

Carbon Black Extracts
Chlorophenols
Crystalline silica
Gasoline Vapors

V. Substances which have not been identified as Toxic Air Contaminants and are being evaluated for entry into Category IV.

Aluminum and compounds
2-Aminoanthraquinone
Ammonia
Ammonium nitrate
Barium and compounds
Benzidine-based dyes
Bis(2-ethylhexyl)adipate
Bromine and compounds (inorganic)
Butyl acrylate
n-Butyl alcohol
sec-Butyl alcohol
tert-Butyl alcohol
Butyl benzyl phthalate
Chlorine dioxide
Chlorinated fluorocarbons
Chloropicrin
Copper and compounds
Creosotes
Cumene hydroperoxide
Cyclohexane
Decabromodiphenyl oxide
Dialkylnitrosamines
1,2-Dichlorobenzene
Diaminotoluene (mixed isomers)
Ethylene
Glutaraldehyde
Hexachlorocyclohexanes
Hydrogen sulfide
Isopropyl alcohol
4,4'-Isopropylidenediphenol
Michler's ketone
Molybdenum trioxide
Nitric acid
Nitrilotriacetic acid
2-Phenylphenol
Phosphoric acid
Potassium bromate
Propene
Silver and compounds
Sodium hydroxide
Sulfuric acid
Thiourea
1,2,4-Trimethylbenzene
Zinc and compounds

VI. Identified substances not known to be emitted in California based on information from the Air Toxic "Hot Spots" Program and the California Toxic Release Inventory. Some may be active ingredients in pesticides in California[7].

2-Acetylaminofluorene
4-Aminobiphenyl
Benzidine
Benzotrichloride
Biphenyl
Bis(chloromethyl)ether
Bromoform
Calcium cyanamide
Caprolactam
Captan
Carbaryl
Chloramben
Chlordane
2-Chloroacetophenone
Chloromethyl methyl ether
Coke oven emissions
m-Cresol
o-Cresol
p-Cresol
2,4-D, salts and esters
(2,4-Dichlorophenoxyacetic acid)
DDE
(p,p-Dichlorodiphenyldichloroethylene)
Diazomethane
1,2-Dibromo-3-chloropropane
Dichloroethyl ether
(Bis(2-chloroethyl)ether)
Dichlorvos
N,N-Diethyl aniline
(N,N-Dimethyl aniline)
Diethyl sulfate
3,3-Dimethoxybenzidine
4-Dimethyl aminoazobenzene
3,3-Dimethyl benzidine
Dimethyl carbamoyl chloride
4,6-Dinitro-o-cresol, and salts
2,4-Dinitrophenol
2,4-Dinitrotoluene
1,2-Diphenylhydrazine
Ethylene imine (Aziridine)
Heptachlor
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexamethylphosphoramide
Lindane (all isomers)
Methoxychlor
Methyl hydrazine
Methyl iodide (Iodomethane)
Methyl isocyanate
N-Nitroso-N-methylurea
4-Nitrobiphenyl
4-Nitrophenol
Parathion
p-Phenylenediamine
beta-Propiolactone
Propoxur (Baygon)
Quinoline
Quinone
Styrene oxide
1,1,2,2-Tetrachloroethane
2,4-Toluene diamine
o-Toluidine
Toxaphene
(Chlorinated camphene)
2,4,5-Trichlorophenol
Triethylamine
Trifluralin
2,2,4-Trimethylpentane
Vinyl bromide

Note: The following are being proposed for removal from the list because they are from the original Category III on the June 1996 TAC List, there are no known emissions in California, and were not identified as Toxic Air Contaminants.

Ammonium sulfate
Benzoyl chloride
Dicofol
Peracetic acid
Terephthalic acid

Note: Environmental Tobacco Smoke is proposed for removal since the risk assessment was approved by the Scientific Review Panel on June 19, 1997.

Note: For all listings above which contain the word "compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e, antimony, arsenic, etc.) as part of that chemical's infrastructure.

* Indicates compound is nominated for the development of a cancer potency, chronic noncancer, or acute noncancer health value (applies to sections IIb and IVb).

‡ These substances have health values developed for use in other California Environmental Protection Agency programs and have not been reviewed by the Scientific Review Panel.

[1] Potency Equivalency Factors (PEF) have been developed for the polycyclic aromatic hydrocarbons (PAHs) listed under benzo[a]pyrene. Using benzo[a]pyrene as a reference compound, a weighting scheme for PAHs was developed in the 1994 Air Resources Board document entitled, Health Effects of Benzo[a]pyrene. When a specific potency value is developed for a chemical, it should be used in place of the PEF.

[2] Includes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol ($R(OCH_2CH_2)_n$ -OR' where

n = 1,2 or 3

R = alkyl or aryl groups

R = R,H, or groups which, when removed, yield glycol ethers with the structure; $R(OCH_2CH)_n$-OH. Polymers are excluded from the glycol category.

[3] Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

[4] X'CN where X=H' or any other group where a formal dissociation may occur. For example, KCN or $Ca(CN)_2$

[5] Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 °C.

[6] A type of atom which spontaneously undergoes radioactive decay.

[7] The licensing and regulation of pesticides for sale and use in California are the responsibility of the Department of Pesticide Regulation.

ARB/SSD/SES
September 9, 1997